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ABSTRACT

This booklet describes a systematic procedure for determining learner needs in the form of a hierarchy of learner performance objectives. A determination is made of the effectiveness of educational programs currently being implemented to meet these needs and of how changes in the programs might more effectively meet learner needs by developing a hierarchy of process objectives. Chapter 2 deals with staff development and inservice training with suggested resources, organization, and motivation for inservice training; alternate ways of implementing the training program, representation of levels of the educational system, establishment of a hierarchy of performance objectives, and systematic format for writing performance objectives, criteria for a performance objective, and development and writing of process objectives. Chapter 3 deals very briefly with the establishment of monitoring and audit procedures. Chapter 4 considers the assessment of outcomes and determination of needs, and Chapter 5 deals with budget allocations. (MBM)

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Sourcebook for Implementing Accountability

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FOREWORD

This booklet describes a systematic procedure for determining learner needs in the form of a hierarchy of learner performance objectives. A determination is made of the effectiveness of educational programs currently being implemented to eliminate these needs; and how changes in these programs might more effectively eliminate learner needs by developing a hierarchy of process objectives. In fact, this booklet contains a comprehensive plan for implementing the concept of accountability.

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INTRODUCTION

There have been many definitions attached to the word "accountability" since it was used in connection with programs funded under ESEA Titles VII and VIII. For the purpose of this text, accountability will simply be defined as a systematic procedure for determining:

(1) learner needs in all domains of behavior (i.e., cognitive, psychomotor, etc.)

(2) the *effectiveness* of the educational program that is being implemented to eliminate these needs

(3) the degree to which change within the educational program results in a more effective elimination of learner needs

The definition applied to the word *effectiveness* is the most *efficient* use of personnel time and facilities in eliminating learner needs. Further, a definition of *efficient* is getting the most out of the dollar. It is recognized that the reader may feel that other components of an educational program structure such as "management information system" should be mentioned in the definition of accountability. However, rather than becoming lost in a semantic jungle by attempting to define accountability in an acceptable manner to all, the following pages will use the previously-stated definition of accountability as a referent point to provide the reader with a comprehensive plan for implementing his definition of accountability.

Chapter I

IDENTIFICATION OF TARGET PROGRAM

Many times state departments of education, school districts, and/or schools have attempted to implement accountability and have failed because they have "bitten off more than they could chew." In other words, states or districts who attempt to implement accountability over the total curriculum, K-12, will more likely fail because the attempt results in a huge conglomeration of data which cannot be used to identify learner needs and assess the effectiveness and efficiency of the educational program being implemented to eliminate learner needs. This situation occurs due to a lack of pre-specified procedures for implementing accountability concepts. It is because of this lack of implementation procedures that administrators should "focus" on a target program(s) when beginning the implementation of accountability. By following this procedure, accountability can be implemented using a manageable part of the educational program and, consequently, there is a greater chance for valid implementation procedures to be established. Then, in continuing phases, accountability can be implemented in other parts of the curriculum with relative ease because of the prior establishment of implementation procedures. Eventually, as the cycling process continues, accountability can be implemented throughout the total curriculum, K-12. An appropriate cliché to recall in describing this process is "Rome was not built in a day."

To begin the process of implementing accountability, careful consideration should be taken in selecting a part of the curriculum that is well-defined and realistic in terms of measurement. This is not to say that a "cop out" is taking place with respect to the more difficult-to-measure curriculum areas such as values and attitudes. In setting up accountability procedures in the first phase, it appears reasonable to begin with a part of the curriculum that will allow for a high degree of success. Not only does this allow for the total plan to be field tested, but also provides some positive reinforcement to the staff to continue and expand.

Chapter II

STAFF DEVELOPMENT AND IN-SERVICE TRAINING

Once the target program is identified, it becomes necessary to provide the encompassed staff with in-service training in two areas: (1) developing and writing performance objectives and (2) developing and writing process objectives. It should be noted that *all* staff that have either a direct or indirect relationship to the children in the target program(s) should be included in the in-service training. By a *direct* relationship is meant that one's activities can only be carried out in cooperation with the learner. An *indirect* relationship is when one's activities can be carried out without participation on the part of the learner. These two definitions, of course, imply that administrators should take part in the in-service training.

In order to provide an atmosphere for in-service training that is conducive to learning and production, the following recommendations are made concerning resources, organization, motivation, and alternatives for conducting the in-service training:

Recommendations for In-Service Training

Resources

1. Select established materials.
2. Utilize effective trainers or consultants.
3. Provide adequate time for training to occur.

Organization

1. Training should be limited to groups in the following ratios:
   (a) Exposure — Infinite number of persons.
   (b) Awareness — Twenty to thirty persons.
   (c) Individual Skill — Ten to fifteen persons.
   (d) Leadership Skill — Five to eight persons.
2. Time allotted to sessions should
   (a) be convenient to participants,
   (b) occur on weekdays between hours of 8:30 a.m. - 3:30 p.m.
3. Facility for training should
   (a) be comfortable in
      (1) seating
      (2) space
      (3) usability
   (b) include equipment necessary to facilitate training.

Motivation

1. A realistic need for the training must be communicated to the participants.
2. A description of how the training will improve the participants' lots in life should be made.
3. Anxiety and threats should be reduced in order to deter any superficial efforts on the part of the participants.

Alternatives for Implementing In-Service Training Program

Alternative 1

1. Utilize an outside agency to train all district staff during a selected time interval.
2. Utilize the same agency to assist in implementing and managing the program once the training is complete.

Alternative 2

1. Utilize an outside agency to train the district administrators.
2. District administrators in turn would train the remaining district staff.
3. Utilize the outside agency to assist in implementing and managing the program once all staff members are trained.

Alternative 3

1. Select members of the district staff who have successfully demonstrated their ability to work with people.
2. Provide these selected persons with the opportunity to receive leadership training.
3. Once these persons have become resource people, utilize them to train the remaining district personnel.
4. Utilize an outside agency to implement and manage the program after all staff have been trained.

Alternative 4

1. Utilize an outside agency to train the district administrators.
2. The trained administrators in cooperation with the outside agency would train the remaining district staff.
3. The outside agency could be utilized in the implementation and management of the program.

Alternative 5

1. An outside agency could be selected to implement and manage the total program.

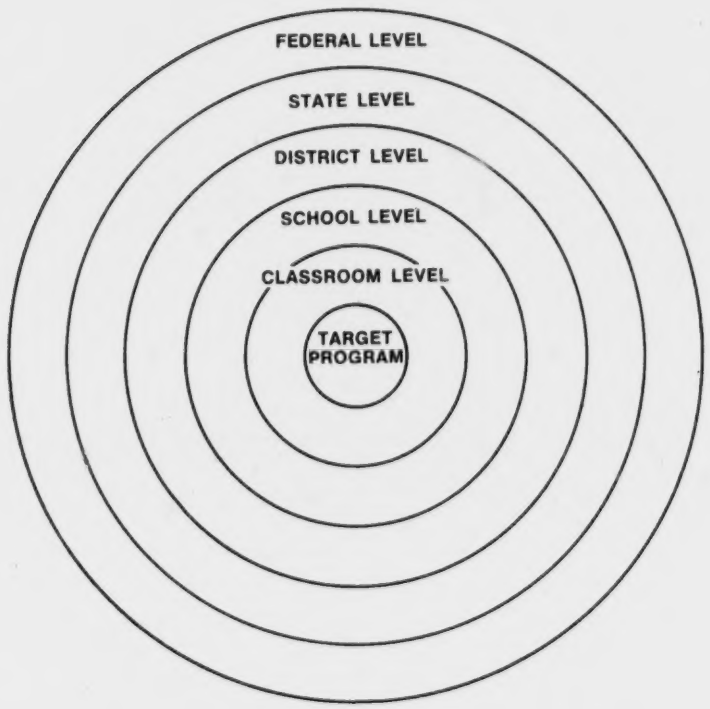
Alternative 6

1. The school district could develop and implement any satisfactory approach deemable to their program.
2. Secure an outside agency for audit purposes.

A. Representation of Levels of the Educational System

As mentioned previously, the implementation of accountability begins with the specification of desired learner performance in the form of objectives. This can become a very tedious task if it is not approached in a systematic manner. It is suggested that once the target program(s) is specified, a decision must be made concerning the maximum level at which the educational system will be involved in implementing accountability in the previously-specified target program. The levels of the educational system could be described by numbers of students involved in the target program. Therefore, the maximum range might be from Federal representation to the specific classroom representation. (Figure 1 depicts the various levels that might be considered when deciding the extent to which accountability will be implemented in a given cycle.)

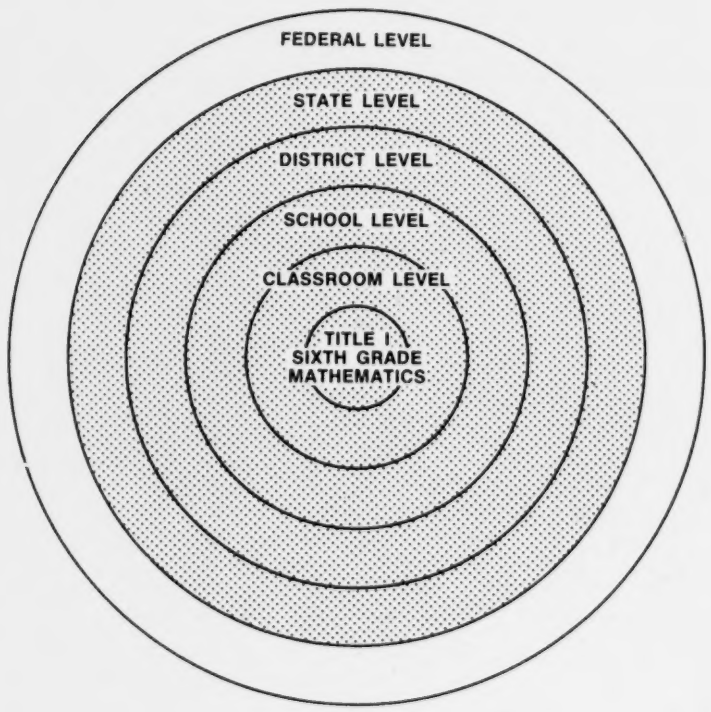
Figure 1
LEVELS OF THE EDUCATIONAL SYSTEM



The extent of representation of the educational structure in implementing accountability procedures in the target program depends many times on what level of the educational structure the initial thrust for accountability was made. For example, if state level educators were the first group to establish the guidelines for accountability, more than likely representation of the educational structure in the first cycle would extend to the state level.

For the purpose of this booklet, the target program will be specified as Title I programs in sixth grade mathematics and the maximum level of representation will be the state. (Figure 2 illustrates how this might be depicted.)

Figure 2
LEVELS OF THE EDUCATIONAL SYSTEM FOR WHICH ACCOUNTABILITY WILL BE IMPLEMENTED



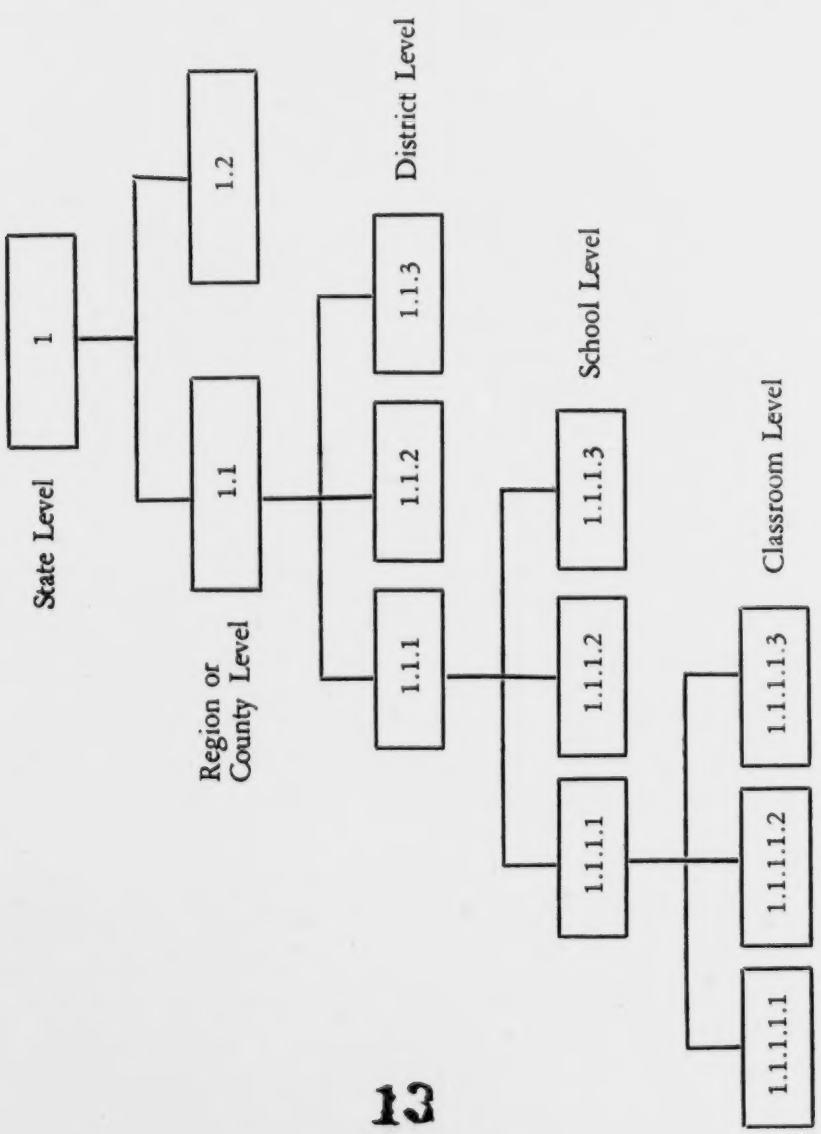
B. Establishment of a Hierarchy of Performance Objectives

Once the extent to which accountability procedures will be implemented is established, representatives from each level can be identified and in-service training can begin.

The approach to developing and writing objectives should lead to the eventual establishment of a hierarchy of objectives from the state level down to the school level and even the classroom level. This hierarchy of objectives would allow for the breaking down of the probable intangible state level objectives into more tangible measurable objectives at the school or classroom level.

Figure 3 provides an example of how the objective hierarchy structure might appear for sixth grade Title I students in mathematics.

Figure 3
STRUCTURE OF OBJECTIVES BY LEVELS OF SPECIFICITY



One might ask the question, "Should the building of the hierarchy begin at the state level and proceed downward or should it begin at the classroom level and proceed upward?" Both approaches have met with success and the important ingredient that appears to be used in deciding which approach to take is where the most information is located for writing realistic, attainable, and valid performance objectives for the learner. The solution would seem to be at the classroom and/or school level where there is a direct relationship between learners and the people responsible for implementing the educational program.

C. Systematic Format for Writing Performance Objectives

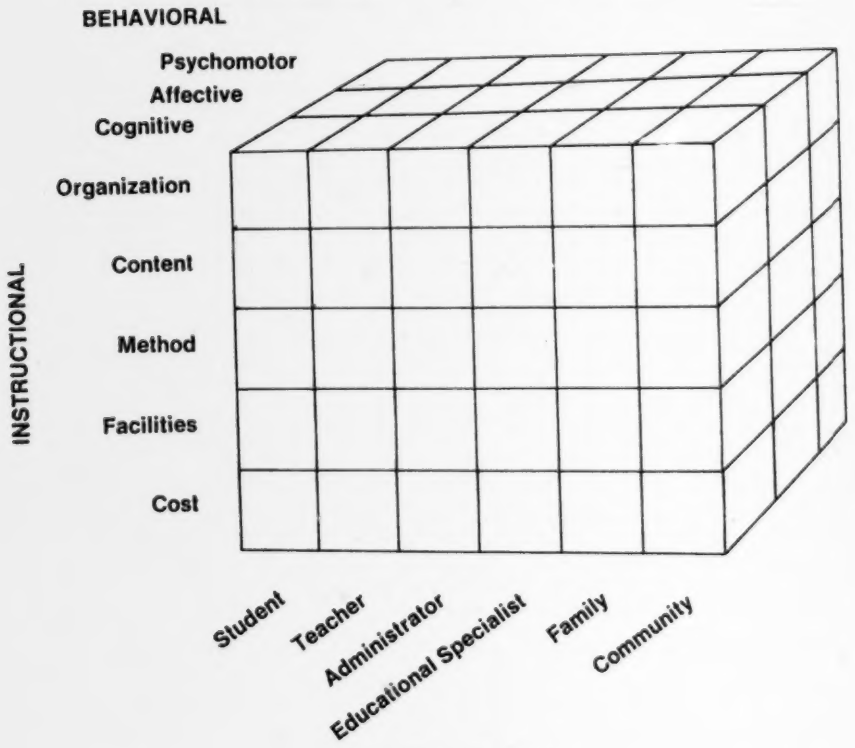
Once it is decided how the hierarchy of objectives should be constructed and consequently where the first objectives should be written, a scheme for writing the objectives should be agreed upon and used by staff at all levels. If a different format for writing objectives is utilized at each level of Figure 3, a problem of semantics may result and communication between the levels would be confused.

A suggested approach to developing and writing performance objectives has been developed by EPIC Diversified Systems and is based on a structure of variables affecting educational programs that is displayed in Figure 4.

(1) Institutional Dimension

The structure classifies all people along the Institutional Dimension. The people variables in an educational setting are important considerations. These variables are described as students, teachers, administrators, specialists, families, and communities.

Figure 4
AN ORGANIZATIONAL STRUCTURE OF VARIABLES AFFECTING EDUCATIONAL PROGRAMS



Students may be described in a variety of ways. When developing educational programs, it is essential that the characteristics be thoroughly described (i.e., age, sex, achievement level, etc.).

The *Teacher* variable in an educational program can be described in terms of grade level taught, highest degree held, number of years experience, etc.

The *Administrator* is described as the person usually responsible for the educational program (i.e., superintendent, principal, director).

The *Specialist* is described as a person who per-

forms a role unique only to a particular instructional setting (i.e., a curriculum coordinator, special teacher, etc.).

The *Family* variable refers to the parents or legal guardian of the child, and includes brothers and sisters.

The *Community* variable includes such groups as P.T.A., service clubs, religious, political, and similar groups.

(2) Behavioral Dimension

The second dimension classifies behavior into three variables:

1. Cognitive
2. Affective
3. Psychomotor

To describe the variables of Cognitive and Affective behavior, Bloom[1] and Krathwohl[2] will be utilized. To describe the Psychomotor variable, Dave[3] will be utilized.

The six levels of the *Cognitive* behavioral variable are:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

[1]Benjamin S. Bloom, *et al., Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*. New York: David McKay Company, Inc., 1956.
[2]David R. Krathwohl, *et al., Taxonomy of Educational Objectives, Handbook II: Affective Domain*. New York: David McKay Company, Inc., 1956.
[3]Dr. R. H. Dave, National Institute of Education, NIE Building, Nehrauli Road, New Delhi, India.

The five levels of the *Affective* behavioral variable are:

1. Receive
2. Respond
3. Value
4. Organization
5. Characterization

The five levels of the *Psychomotor* behavioral variable are:

1. Imitation
2. Manipulation
3. Precision
4. Articulation
5. Naturalization

(3) Instructional Dimension

The variable of *Organization* refers to the manner in which students are organized for learning (i.e., self-contained classroom, departmentalized, non-graded, etc.).

Content is defined as a body of knowledge topically described (i.e., algebra, American problems, reading).

The *Method* variable can be described as:

1. teaching activities (i.e., lecture, demonstration).
2. types of interaction (i.e., teacher-student, student-student).
3. learning principles or theories (i.e., operant conditioning).

The *Facilities* variable refers to that space, special equipment, and expendables needed to support an educational program.

Cost is described as the money required for facilities, maintenance, and personnel to accomplish a given task.

D. Criteria for a Performance Objective

Essentially, six questions should be answered when writing a performance objective:

1. What is the Institutional Variable?
2. What is the Behavioral Variable?
3. What is the Instructional Variable?
4. What method of measurement is to be utilized?
5. What is the time needed to bring about expected behavior?
6. What is the expected Proficiency Level?

Assuming that the hierarchy is to begin at the state level, an objective might be:

> "At the end of the school year 1970-71, sixth grade Title I students who have completed the total school year will show an average increase of at least one grade level across all assessed cognitive skills as measured by pre- and post-administrations of state adopted or developed tests."

One can observe that the:

1. Institutional variable is Sixth Grade *Student.*
2. Behavioral variable is *Cognitive.*
3. Instructional variable is *Content.*

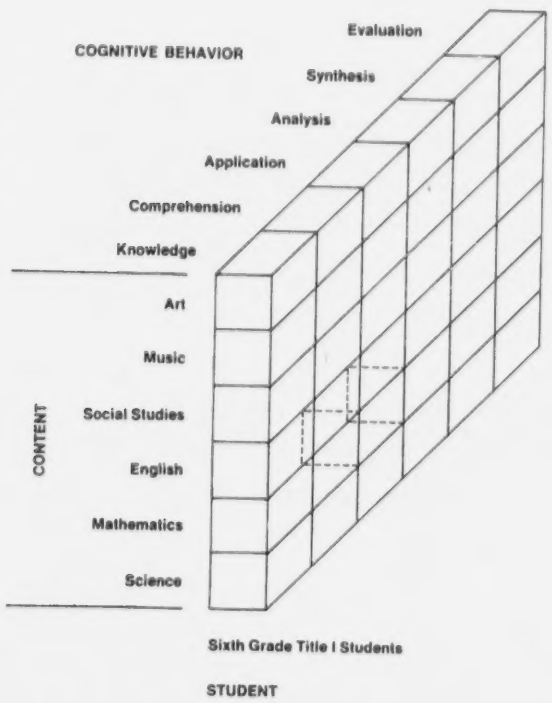
4. Method of measurement is the *state testing program.*
5. Time is *school year 1970-71.*
6. Proficiency level is *grade level.*

The next task is to develop and write performance objectives at the district level to continue the building of the hierarchy. This task can be carried out utilizing the Structure in Figure 5. The first step is to identify the factor contained in the state level objective. A factor is simply the combination of one variable from each of the three dimensions. Therefore, the factor contained in the above state level objective is: Student-Content-Cognitive Behavior (see Figure 5). The next step is to take this factor and have representatives at the district level develop a new organizational structure more specific in nature. A concern might be expressed at this point that it would be impossible to get representatives together from all districts to accomplish this task, let alone the developing and writing of district performance objectives. It is suggested that sampling techniques be utilized to select a representative sample of districts that truly represent all districts in the given state. How the sampling takes place would depend on the variables that are to be represented at the district level (ADA, geographic location, socio-economic level, ethnic representation, etc.).

An example structure that might result at the district level is displayed in Figure 5.

The Student Variable now becomes more specific by indicating only sixth grade students. The Content Variable of mathematics is now broken down into six content areas, while the Cognitive Variable is defined more specifically

Figure 5
EXAMPLE BREAKDOWN OF STUDENT-CONTENT-COGNITIVE BEHAVIOR AT THE DISTRICT LEVEL



by using the cognitive levels of Bloom's Taxonomy. It should be emphasized that the structure appearing in Figure 5 serves only as an example of the many different structures that could be developed from the *Student-Content-Cognitive* factor.

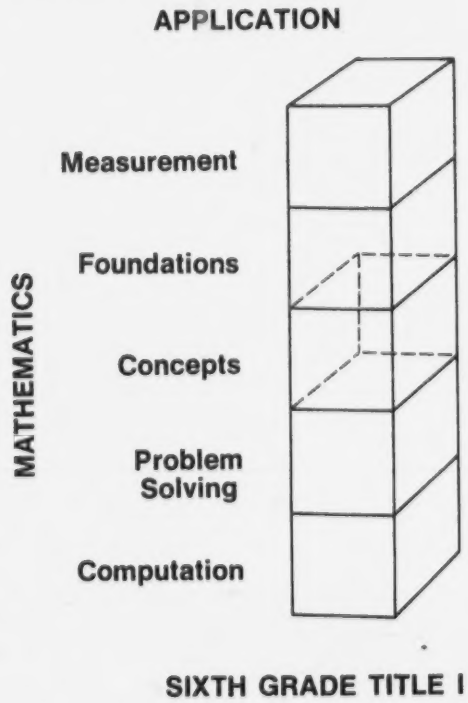
An example performance objective that might be written utilizing the structure in Figure 5 might be:

> "At the completion of the school year 1970-71, District #7 sixth grade Title I students will show an average growth of at least one grade level in their application of mathematics as measured by pre- and post-administrations of the SRA Achievement Test, Mathematics Section, Form D."

When compared to the state level objective, this district level objective is much more specific. This is due to the fact that the variables which are being used to write the objective are much more specific.

The factor identified in the above objective is: Sixth grade Title I Students-Mathematics-Application. Utilizing this factor, an organizational structure of variables at the school level could be developed and used for writing performance objectives. An example of a school level structure appears in Figure 6.

Figure 6
EXAMPLE BREAKDOWN OF SIXTH GRADE TITLE I STUDENT-MATHEMATICS-APPLICATION AT THE SCHOOL LEVEL



In the example chosen, the school level structure differs from district level structure only in its specification of

subtopics for the content area of mathematics (see Figure 5). The Behavioral variable of Application and the Institutional variable of Sixth Grade Title I students have not changed. Again, it should be emphasized that this is only one example of the many structures that could be formed from the factor: sixth grade Title I Student-Mathematics-Application. For example, one might want to further break down sixth grade Title I students and/or the Behavioral variable of Application into different sub-levels.

An example performance objective that could be written at the school level utilizing the above structure might be:

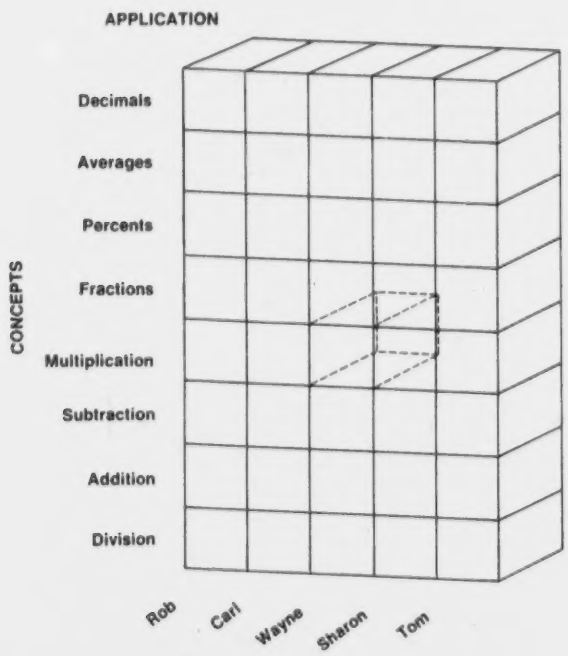
> "By the end of the school year 1970-71, each sixth grade Title I student will show an average growth of at least one grade level in application of mathematical concepts as measured by pre- and post-administrations of the SRA Mathematics Sub-test Concept Section."

Again, one can observe that this objective is more specific in nature than the two previous objectives. Also, in developing and writing school level objectives, the same procedures could be used in terms of sampling techniques as was used at the district level.

The last and most specific level of the performance objective hierarchy is the classroom level. More than likely, the organizational structure of variables developed at this level would be individualistic in nature and, consequently, would change from teacher to teacher. An example of an organizational structure that might be used at the classroom level to develop and write objectives appears in Figure 7.

The only difference between the classroom level structure and school level structure is, again, the specificity of

Figure 7
EXAMPLE BREAKDOWN OF SIXTH GRADE TITLE I STUDENT-MULTIPLICATION-APPLICATION AT THE CLASSROOM LEVEL



sub-topics within the content variable and the identification of individual students. It should again be emphasized that this structure only serves as an example of many different organizational structures of variables that could be developed at the classroom level.

An example objective that could be written utilizing this structure might be:

> "At the end of the first month of school, sixth grade Title I students will demonstrate their application of the concept of multiplication by correctly answering ten teacher-selected multiplication problems with a two-digit multiplier and a three-digit multiplicand."

In summary, as pointed out in Figure 4, by using the same procedure of writing objectives at various levels of specificity, one is able to trace through the various levels of abstraction and determine the level of attainment of any objective at any level of specificity. This procedure might eliminate many problems that exist between state level objectives and how they are operationalized at the instructional level. Consequently, the result might be a more accurate appraisal of the degree of attainment of those objectives which are written for very large populations.

In order to eliminate much of the repetitiousness that sometimes occurs when writing objectives at different levels of specificity, Figure 8 displays a suggested format which could be used in describing the various required elements of a performance objective.

Figure 8
FORMAT FOR WRITING PERFORMANCE OBJECTIVES

Institutional Variable: .....

	Behavior	Instructional Variable	Proficiency	Measurement	Time
1.					
2.					
3.					
4.					
•					
•					
•					
N					

E. Developing and Writing Process Objectives

Once the performance objectives have been established, the instructional program that will be implemented in order to accomplish these objectives must be described. In order to assure a valid relationship between the performance objectives and the planned instructional program, the development of process objectives should take place.

A process objective is a statement that describes an activity which directly or indirectly affects the performance of the learner. A *direct* relationship exists when the activity described in the process objective can be carried out *only* in cooperation with the learner identified in a previously-specified performance objective. An *indirect* relationship exists when the activity described in the process objective can be carried out without participation on the part of the learner identified in a performance objective.

There are two very important assumptions concerning process objectives. First, it is assumed that the developing and writing of process objectives will be a continuous process because it is intended that they provide an ongoing description of the program that is being implemented to bring about the attainment of a given set of performance objectives. Second, it is assumed that the validity of a process objective is greatly enhanced if it can be related directly or indirectly to a performance objective.

Once the objective hierarchy has been established, the performance objectives at any given level can be used as a basis of reference when the developing and writing of process objectives begins.

Below are listed four elements that should be included in a process objective:

ELEMENT NUMBER ONE: The individuals and/or groups responsible for implementing and carrying out the activity must be specified in the process objective. These individuals and groups are classified as:*

1. Students
2. Teachers
3. Administrators
4. Specialists
5. Family
6. Community Groups

*NOTE: In most instances one of the above persons would be considered the student in a performance objective for which process objectives are being written and therefore the student would not appear in any process objectives.

ELEMENT NUMBER TWO: Any activity relating to the development of a tangible outcome whose accomplishment increases the probability of reaching a performance objective. It should be noted that activities may be stated in general or specific terms. The level of specificity should be determined by the authors of

the objectives. It is most important that any activity that appears in a process objective should be related to a tangible outcome.

ELEMENT NUMBER THREE: Process denotes sequence and timing. Therefore, the process objective should make clear* important time factors operating in the completion of the activity.

*NOTE: Time factors may be indicated in a separate monitoring system, calendar of events, PERT chart, etc.

Some examples of time factors are:

1. Point in time when activity is expected to be completed.
2. Periodic check points such as weekly, monthly, etc.
3. Frequency of employment of the activity within a specified period of time such as three times a week or twice a month.

ELEMENT NUMBER FOUR: The identification of the tangible outcome which will result at the completion of the activity.

It should be noted that the validity of the developed process objective is greatly enhanced if it is written with a performance objective at the same level of specificity as a focal point. The reason for this is because process objectives and performance objectives have the same relationship as program description and behavioral objectives. Process objectives could be defined as the independent variable — or that variable whose effects are being studied. Performance objectives could be described as the dependent variable — that which is being affected by the independent variable. Figure 9 displays the relationship.

Figure 9
RELATIONSHIP BETWEEN PERFORMANCE AND PROCESS OBJECTIVES

Performance Objectives (Dependent Variable)		Process Objectives (Independent Variable)
1. Institutional Variable		1. The individuals and/or groups responsible must be specified.
2. Behavioral Variable	EFFECTS	2. An activity must be stated in the objective.
3. Instructional Variable		3. Time factors must be included.
4. Method of Measurement		4. A tangible outcome must be identified.
5. Time or Prerequisites		
6. Proficiency Level		

An example process objective might be:

"The elementary supervisory staff will visit every accredited public and private elementary school at least once a month and submit their written recommendations to the Associate Superintendent of Instruction."

1. *Person(s) Responsible*: Elementary supervisory staff.
2. *Activity*: Visitation to every accredited public and private elementary school.

3. *Time Factor*: At least once a month.
4. *Tangible Outcome*: Submission of written recommendations to the Associate Superintendent of Instruction.

Because of the limited amount of space in this booklet, only a selected number of process objectives will be described for each level of the performance objective hierarchy. However, it is realized many more process objectives would have to be developed to define an educational program.

Below are some examples of process objectives that might be written at the state, district, school, and classroom levels as they relate to the previously-specified performance objectives.

PERFORMANCE OBJECTIVE

STATE LEVEL

At the end of the school year 1970-71, sixth grade Title I students who have completed the total school year will show an average increase of at least one grade level across all assessed cognitive skills as measured by pre- and post-administrations of state adopted or developed tests.

PROCESS OBJECTIVES

STATE LEVEL

1. *By November 1,* the *Associate Commissioner of the Federal Programs Division* will hold a *meeting with all Section Coordinators* to consider data collection and compiling procedures for all Federally funded projects and *submit his recommendations in written form to the Commissioner.*
2. *By January 15,* the *Coordinator of Title I* will *confer with all Title I State consultants* concerning post-testing dates for Title I projects and *submit the compiled list to the Associate Commissioner.*
3. *By March 1,* the *Title I State Consultant* will *confirm*

with each project director in his Title I Region the post-testing dates and verify this confirmation by *submitting a signed voucher from each project director to the Title I Coordinator.*

PERFORMANCE OBJECTIVE

DISTRICT LEVEL

At the completion of the school year 1970-71, District #7 sixth grade Title I students will show an average growth of at least one grade level in their application of mathematics as measured by pre- and post-administrations of the SRA Achievement Test, Mathematics Section, Form D.

PROCESS OBJECTIVES

DISTRICT LEVEL

1. *By March 30,* the *Title I Project Director* will *meet with the school principals* to determine in what format the data for the post-testing will be sent to his office as reflected in a *written memo to each principal.*
2. *By April 1,* the *Project Director* will *meet with the Associate Superintendent of Instruction* to review the Title I post-testing procedures in the schools and make any necessary changes as reflected in a *signed copy of the procedures by the Associate Superintendent.*

PERFORMANCE OBJECTIVE

SCHOOL LEVEL

At the end of the school year 1970-71, sixth grade Title I students who have completed the total school year will show an average increase of at least one grade level across all assessed cognitive skills as measured by pre- and post-administrations of state adopted or developed tests.

PROCESS OBJECTIVES

SCHOOL LEVEL

1. *By April 15,* the *principal of School A* will *meet with the two sixth grade teachers* to review how the SRA Mathematics Sub-Test is to be administered and *reflected in the minutes of the meeting.*
2. *By April 20,* the *principal* will *supply each teacher with the requested number of test booklets and answer sheets*

as reflected in the teacher's weekly monitoring report.

3. *By April 30, each sixth grade teacher* will *schedule a one-hour block of time* for the testing of the Title I children and *submit this schedule to the principal.*

PERFORMANCE OBJECTIVE

CLASSROOM LEVEL

At the end of the first month of school, sixth grade Title I students will demonstrate their application of the concept of multiplication by correctly answering ten teacher-selected multiplication problems and a two-digit multiplier and a three-digit multiplicand.

PROCESS OBJECTIVE

CLASSROOM LEVEL

1. *Monday, September 14. Teacher* will *conduct the multiplication lesson* by breaking the class into six small groups; working with each group using a question-answer approach for approximately fifteen minutes per group at which time each *student will turn in his completed problems for correction* from the SRA Workbook.

Again, in order to eliminate much of the repetitiousness in writing process objectives at different levels of the educational system, Figure 10 displays a suggested format for describing the four required elements of a process objective. It should be noted that the performance objectives for which the process objectives are being written should always be stated.

Figure 10
SUGGESTED FORMAT FOR DEVELOPING AND WRITING PROCESS OBJECTIVES

Goal:

Performance Objective:

Process Objective(s):

#1 (a) Person(s) Responsible —
(b) Activity —
(c) Time Factor —
(d) Tangible Outcome —

#2 (a) Person(s) Responsible —
(b) Activity —
(c) Time Factor —
(d) Tangible Outcome —

Again, it should be emphasized that these process objectives should be viewed as only an example of the set of process objectives that would have to be developed in order to describe the total education program that would be implemented for Title I sixth grade students. These process objectives would be developed continuously throughout the implementation period of the given educational program.

The question of whether process objectives should be developed first at the state level and proceed downward through the hierarchy, or at the classroom level and proceed upward through the hierarchy is not particularly important since the performance objective hierarchy is established prior to the beginning of the developing and writing of process objectives, a referent point is established at each level for the development of process objectives. Therefore, one need not be dependent upon what is being done above or below him in the hierarchy because he should develop and write his process objectives as they relate to the performance objective(s) at his level of the educational structure.

Chapter III

ESTABLISHMENT OF MONITORING OR AUDIT PROCEDURES

Procedures should be established to monitor and/or audit on a periodic basis the person(s) responsible for implementing the educational program at any given level of the performance objectives hierarchy to determine if the educational program which is *actually* implemented is the same as that program which was originally planned in terms of process objectives.

The monitoring or audit procedures are usually implemented by someone who is not connected in any way with the educational program under consideration, but he should be qualified to assess the appropriateness of the process objectives and make subsequent recommendations.

Chapter IV

ASSESSMENT OF OUTCOMES AND DETERMINATION OF NEEDS

A point in time is eventually reached when the educational program is completed and learner performance is assessed to determine if the desired behavioral changes have been attained. For those performance objectives that have not been met, a *learner need* is identified. A *learner need* is defined as the situation which occurs when learner performance is below that which is specified in a performance objective. Once this step has been completed for all levels of the objective hierarchy (state, district, school, and/or classroom), the *Needs Assessment* component of accountability has been completed. It should be pointed out that many needs that are identified at the school level may be washed or cancelled out at the district and state levels because of the combining effect with larger populations. For example, +4 and −3 combine to equal +1. Therefore, a high positive gain in one school and a low change in another school may combine to show a positive change for the total district. With the use of an objective hierarchy, this type of problem can be eliminated because needs assessment data would be reported at each respective level — state, district, school, and/or classroom.

A second need that can be identified at this point in time is an educational or support need. An *educational* or *support*

need may be defined as the situation which exists when the required educational resources to accomplish a given performance objective is above that which is actually being used. The first step in determining educational needs is carried out through a review of (1) the process objectives which have been written continuously throughout a given period of time such as a school year, and (2) the compiled monitoring and audit information. These two sets of information together provide a well-documented ongoing description of the educational program that was implemented at any given level of the performance objective hierarchy. The next step in conducting the educational needs assessment is to choose one of the following alternatives after having completed the learner needs assessment at each level of the performance objective hierarchy:

1. Process objectives were not attained.
2. Process objectives were attained.

If alternative 1 is selected, the next step is to decide whether to specify additional educational or support needs, such as staff, facilities, media, etc., to accomplish a given performance objective *or* not change the original program that was planned and attempt to implement it more effectively in the next project cycle. In other words, the identification of a learner need may have been due to the fact that the original program was not implemented rather than a lack of educational resources.

If alternative 2 is selected, more than likely, educational and support needs will be specified for possible incorporation into the following subject period.

Once the above decisions have been made, the *Educational Needs Assessment* is accomplished.

Chapter V

BUDGET ALLOCATIONS

Independent of what alternative is chosen as described above, financial consideration now becomes the next major milestone in implementing accountability.

If valid monitoring and/or audit procedures were used during Learner and Educational Needs Assessment phases, cost can then be directly related to the accomplishment or non-accomplishment of performance objectives through the determination of costs related to process objectives at each level of the educational structure. These process objective costs can be related specifically to the use of personnel and facilities.

Using this information, a unit cost per student per set of performance objectives in the target program can be computed for each level of the educational structure.

Figure 11 displays how these unit costs could be computed.

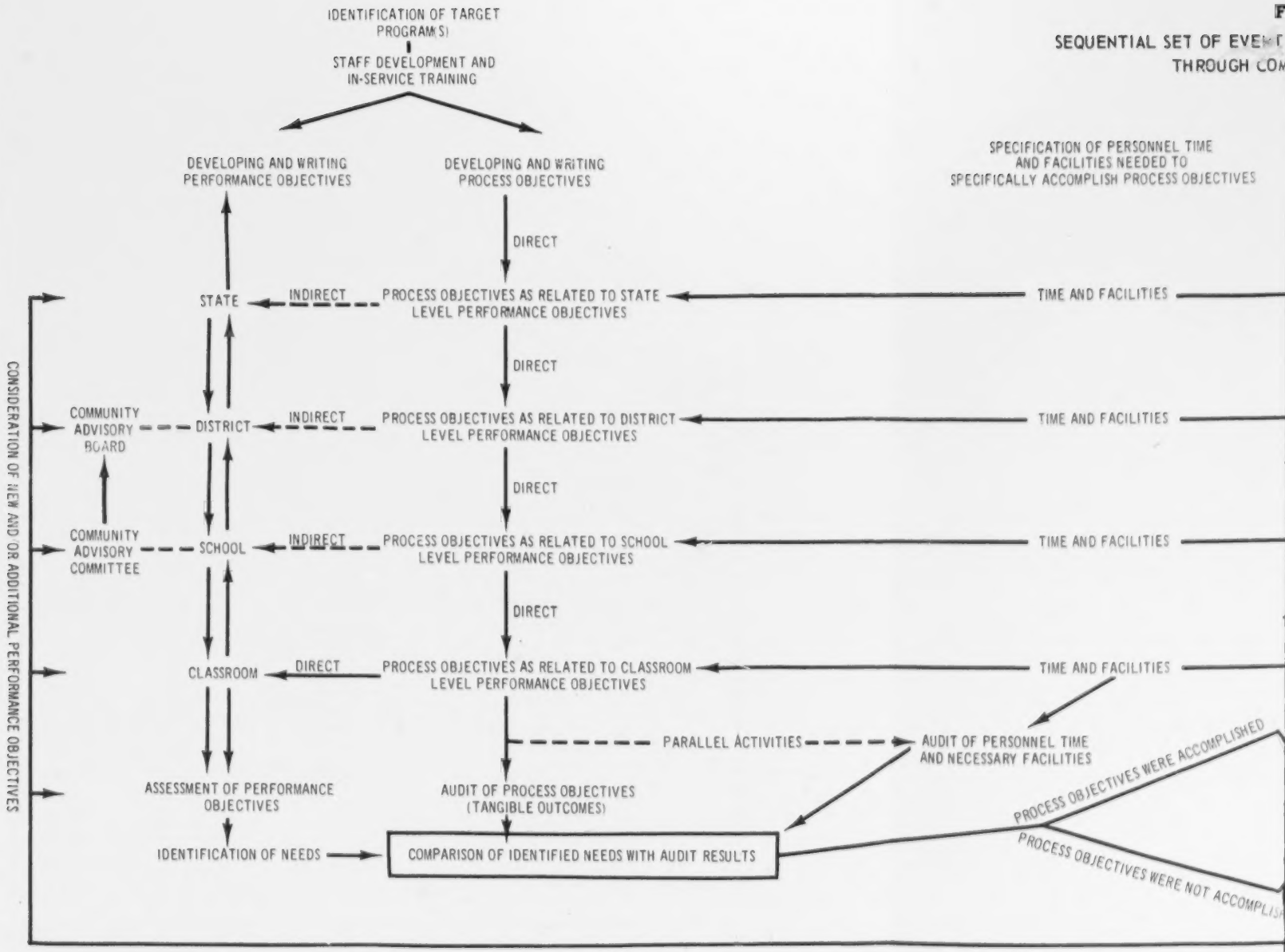
Figure 11
COMPUTATION OF UNIT COSTS

State Level	$\frac{\text{Number of Students Served}}{\text{classroom + school + district + state costs}}$
District Level	$\frac{\text{Number of Students Served}}{\text{classroom + school + district costs}}$
School Level	$\frac{\text{Number of Students Served}}{\text{classroom + school costs}}$
Classroom Level	$\frac{\text{Number of Students Served}}{\text{classroom costs}}$

Once each unit cost is computed, a total unit cost can be computed for the target program by summing across unit costs at each level. This information could then be used to reconsider or reinforce the chosen alternative on page 37.

Figure 12 shows the total sequential set of events for implementing accountability at a given level.

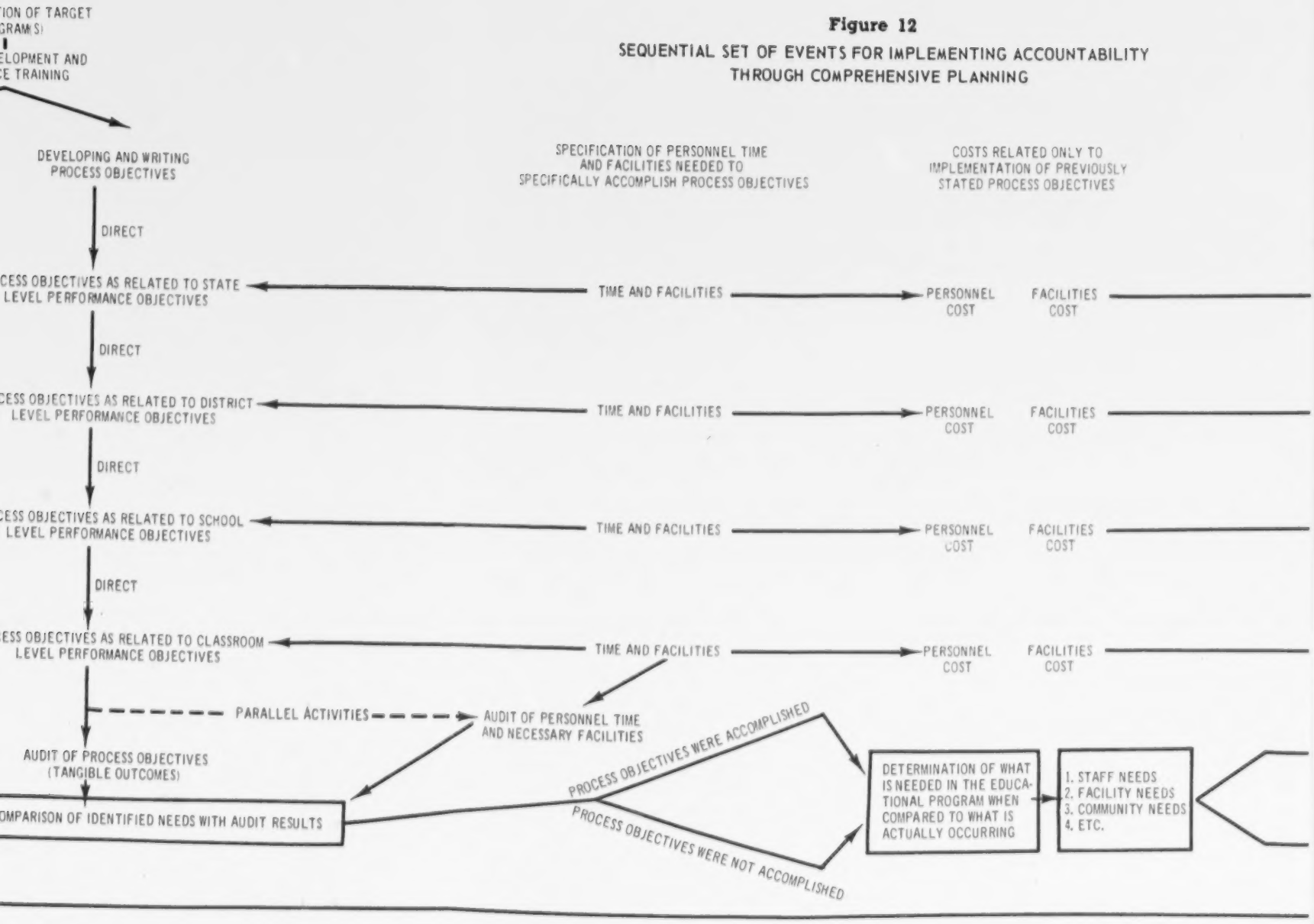
After reconsideration of whether or not to implement the previously-defined educational program more effectively or identify new program input and/or charges for the next project cycle, evaluation procedures are then established to determine if the identified learner needs are eliminated. A systematic procedure for evaluating a given educational program can be found in the publication *A Scheme for Education and An Organizational Structure of Variables* published by Educational Innovators Press, Tucson, Arizona.

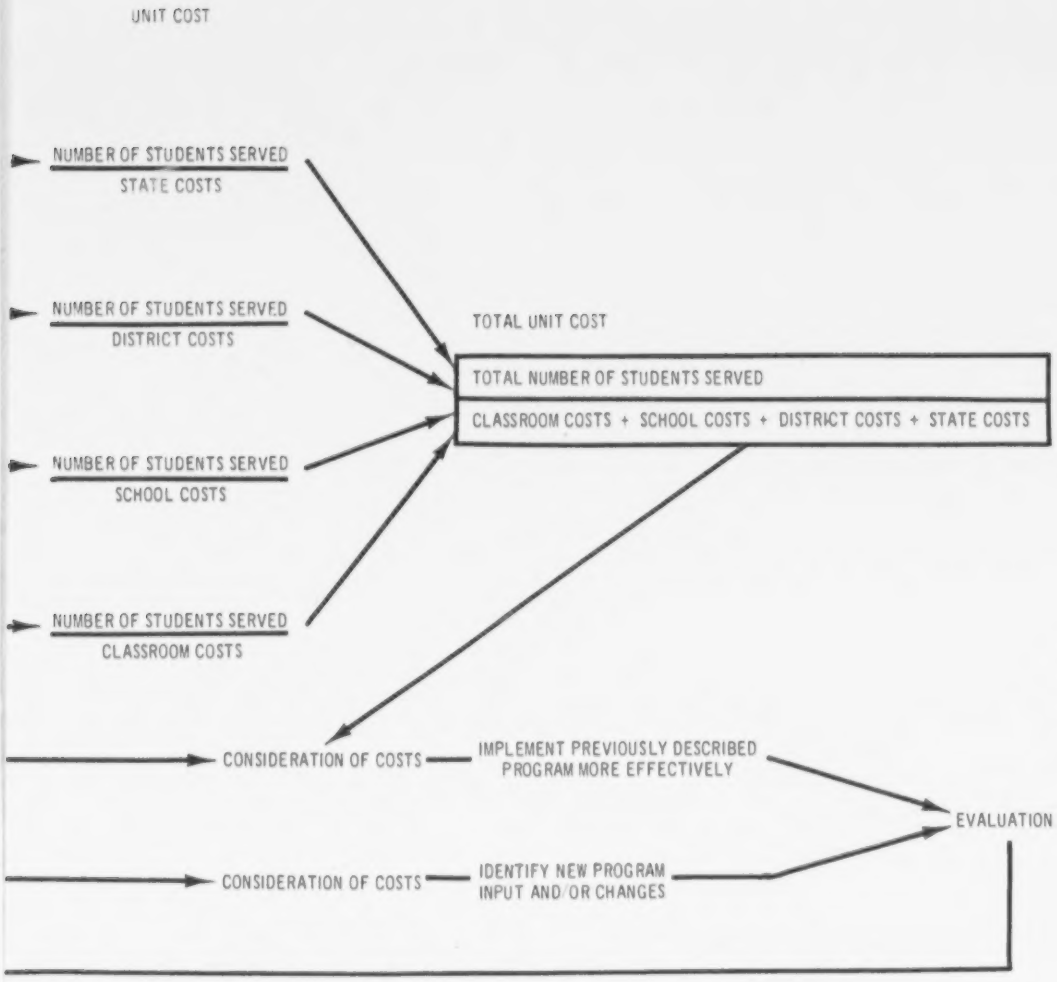

IDENTIFICATION OF TARGET PROGRAM(S)
STAFF DEVELOPMENT AND IN-SERVICE TRAINING
DEVELOPING AND WRITING PERFORMANCE OBJECTIVES
DEVELOPING AND WRITING PROCESS OBJECTIVES
SPECIFICATION OF PERSONNEL TIME AND FACILITIES NEEDED TO SPECIFICALLY ACCOMPLISH PROCESS OBJECTIVES
DIRECT
STATE
INDIRECT
PROCESS OBJECTIVES AS RELATED TO STATE LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
DIRECT
COMMUNITY ADVISORY BOARD
DISTRICT
INDIRECT
PROCESS OBJECTIVES AS RELATED TO DISTRICT LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
DIRECT
COMMUNITY ADVISORY COMMITTEE
SCHOOL
INDIRECT
PROCESS OBJECTIVES AS RELATED TO SCHOOL LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
DIRECT
CLASSROOM
DIRECT
PROCESS OBJECTIVES AS RELATED TO CLASSROOM LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
PARALLEL ACTIVITIES
AUDIT OF PERSONNEL TIME AND NECESSARY FACILITIES
ASSESSMENT OF PERFORMANCE OBJECTIVES
AUDIT OF PROCESS OBJECTIVES (TANGIBLE OUTCOMES)
PROCESS OBJECTIVES WERE ACCOMPLISHED
IDENTIFICATION OF NEEDS
COMPARISON OF IDENTIFIED NEEDS WITH AUDIT RESULTS
PROCESS OBJECTIVES WERE NOT ACCOMPLISH
CONSIDERATION OF NEW AND OR ADDITIONAL PERFORMANCE OBJECTIVES

F
SEQUENTIAL SET OF EVE
THROUGH CO

Figure 12

SEQUENTIAL SET OF EVENTS FOR IMPLEMENTING ACCOUNTABILITY
THROUGH COMPREHENSIVE PLANNING


TION OF TARGET
GRAMS)
ELOPMENT AND
CE TRAINING
DEVELOPING AND WRITING PROCESS OBJECTIVES
SPECIFICATION OF PERSONNEL TIME AND FACILITIES NEEDED TO SPECIFICALLY ACCOMPLISH PROCESS OBJECTIVES
COSTS RELATED ONLY TO IMPLEMENTATION OF PREVIOUSLY STATED PROCESS OBJECTIVES
DIRECT
CESS OBJECTIVES AS RELATED TO STATE LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
PERSONNEL COST
FACILITIES COST
DIRECT
CESS OBJECTIVES AS RELATED TO DISTRICT LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
PERSONNEL COST
FACILITIES COST
DIRECT
CESS OBJECTIVES AS RELATED TO SCHOOL LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
PERSONNEL COST
FACILITIES COST
DIRECT
ESS OBJECTIVES AS RELATED TO CLASSROOM LEVEL PERFORMANCE OBJECTIVES
TIME AND FACILITIES
PERSONNEL COST
FACILITIES COST
PARALLEL ACTIVITIES
AUDIT OF PERSONNEL TIME AND NECESSARY FACILITIES
AUDIT OF PROCESS OBJECTIVES (TANGIBLE OUTCOMES)
OMPARISON OF IDENTIFIED NEEDS WITH AUDIT RESULTS
PROCESS OBJECTIVES WERE ACCOMPLISHED
PROCESS OBJECTIVES WERE NOT ACCOMPLISHED
DETERMINATION OF WHAT IS NEEDED IN THE EDUCATIONAL PROGRAM WHEN COMPARED TO WHAT IS ACTUALLY OCCURRING
1. STAFF NEEDS
2. FACILITY NEEDS
3. COMMUNITY NEEDS
4. ETC.


UNIT COST
NUMBER OF STUDENTS SERVED
STATE COSTS
NUMBER OF STUDENTS SERVED
DISTRICT COSTS
NUMBER OF STUDENTS SERVED
SCHOOL COSTS
NUMBER OF STUDENTS SERVED
CLASSROOM COSTS
TOTAL UNIT COST
TOTAL NUMBER OF STUDENTS SERVED
CLASSROOM COSTS + SCHOOL COSTS + DISTRICT COSTS + STATE COSTS
CONSIDERATION OF COSTS
IMPLEMENT PREVIOUSLY DESCRIBED PROGRAM MORE EFFECTIVELY
EVALUATION
CONSIDERATION OF COSTS
IDENTIFY NEW PROGRAM INPUT AND/OR CHANGES

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